

# Announcement

## Hurricane Disaster in the U.S.: Interim Health Recommendations for Relief Workers

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On August 29, 2005, a category 4-5 hurricane (Katrina) struck coastal areas of the states of Alabama, Florida, Louisiana, and Mississippi, causing numerous deaths, massive infrastructure damage, and flooding. Along the Gulf Coast of Louisiana and Mississippi, the two hardest-hit areas, hundreds of people remain missing. In addition, because of massive flooding, a large-scale evacuation effort is being undertaken to relocate the population of several parishes of Louisiana.

Because of their potential exposures, relief workers are at increased risk for illness and injuries. In addition, they should be aware of potential hazards, such as downed power lines, and security measures that may be imposed, such as curfews to prevent looting. Those who provide assistance should also pay attention to their mental health needs before, during, and after their time in the field. Moreover, because relief workers' services are desperately needed, it is essential that workers remain healthy during their trip. This notice provides additional advice specific to the needs of relief workers.

Relief workers should plan for travel with the knowledge that there may be shortages of electricity, safe water, or food distribution systems in areas affected by the hurricane. They should try to pack to be as self-sufficient as possible and bring only those items necessary for their trip. In addition to a basic [travel health kit](#), relief workers should bring the following items:

### Toiletries

- Alcohol-based hand sanitizer
- Toilet paper
- Sunblock (SPF 15 or higher)
- Insect repellent containing DEET or Picaridin
- Menstrual supplies
- Extra pair of prescription eyeglasses, copy of prescription
- Repair kit and protective case for eyeglasses
- Contact lenses and lens cleaner
- Toothbrush/toothpaste
- Skin moisturizer
- Soap, shampoo
- Lip balm
- Razor, extra blades\*
- Scissors\*
- Nail clippers/tweezers\*
- Q-tips, cotton swabs

## Clothing

- Comfortable, light-weight clothing
- Long pants
- Long-sleeved shirts
- Hat
- Boots
- Shower shoes
- Rain gear
- Bandana/handkerchief
- Towel (highly absorbent, travel towels if possible)
- Gloves
- Leather gloves for physical labor and rubber gloves for handling blood or body fluids

## Activities of daily living

- Sunglasses
- Safety goggles
- Waterproof watch
- Flashlight
- Spare batteries
- Knife, such as a Swiss Army Knife or Leatherman\*

## Security

- Money belt
- Cash
- Cell phone (with charger)
- Candles, matches, lighter in a ziplock bag
- Ziplock bags
- An item of comfort (i.e., family photo, spiritual or religious material)

\*packed in checked baggage, may be confiscated if in carry-on bag on commercial airliner

# Risks and Health Recommendations

The response to the recent hurricane will probably be both immediate and long-term. Relief workers should ideally be assessed by a health-care professional at least 4-6 weeks before travel, so recommended vaccines can be completed and provide maximum benefit. These recommendations apply even if travel is imminent. Vaccinations should be brought up-to-date for all relief workers with a history of incomplete or lapsed routine childhood immunization schedules.

- **Tetanus/diphtheria (Td)** Tetanus and diphtheria toxoid (receipt of primary series, and Td booster within 10 years)

Persons with high likelihood of exposure to blood and body fluids, such as health-care workers:

- **Hepatitis B** vaccine series for persons who will be performing direct patient care or otherwise expect to have contact with bodily fluids

## Risks from Injury

The risk for injury during and after a natural disaster is high. Persons who anticipate the need to travel in hurricane-affected areas should be advised to wear sturdy footwear to protect their feet from widespread debris present in these areas. [Tetanus](#) is a potential health threat for persons who sustain wound injuries. Any wound or rash has the potential for becoming infected; such wounds or rashes should be assessed by a health-care provider as soon as possible. Any wounds, cuts, or animal bites should be immediately cleansed with soap and clean water. Familiarity with basic first aid is advised to self-treat any injury until medical attention can be obtained.

## Preventing Electrocutions

Relief workers should be careful to avoid downed power lines. During power outages, many people use portable electrical generators (<http://www.bt.cdc.gov/poweroutage/workersafety.asp>). If the portable generator is improperly sized, installed, or operated, it can send power back to the electrical lines. This problem is called backfeed or feedback in the electrical energy in power lines. Backfeed can seriously injure or kill repair workers or people in neighboring buildings. In addition, electrical power and natural gas or propane tanks should be shut off to avoid fire, electrocution, or explosions. Battery-powered flashlights and lanterns, rather than candles, gas lanterns, or torches, should be used.

## Risks from Food and Water

Natural disasters contribute to the spread of many serious food and water-borne diseases, especially since water supplies and sewage systems have been disrupted. Diarrheal diseases, due to bacteria, parasites, or [hepatitis A](#), can possibly occur. If a trusted source of bottled water is not available, water should be boiled or disinfected. For more details, see <http://www.cdc.gov/travel/foodwater.htm>.

An antibiotic for self-treatment of acute diarrhea, such as a fluoroquinolone (e.g., ciprofloxacin), can be given. Azithromycin can be used as an alternative. This medication should be taken until symptoms subside (typically 3 days). Anti-motility agents, such as loperamide and diphenoxylate and/or bismuth subsalicylate (Pepto-Bismol), can reduce bowel movement frequency.

Seek medical attention for diarrhea accompanied by a high fever or blood. Replacing lost fluids by drinking clean water is the most important means of maintaining wellness. If oral rehydration solutions are available, they are ideal for the treatment of dehydration from severe diarrhea.

Cleaning your hands often, using soap and water (or waterless alcohol-based hand rubs when soap is not available and hands are not visibly soiled), removes potentially infectious material from your skin and helps prevent disease transmission.

## Risks from Insect Bites

Because of standing water in these areas, mosquito breeding can become a problem. Most mosquitoes, while a nuisance, are not likely to transmit disease. While the potential exists for outbreaks of [West Nile fever](#), [St. Louis encephalitis](#), and [dengue](#), these types of outbreaks are not typical for disasters in the U.S. Use insect repellent containing DEET or Picaridin and wear long-sleeved shirts and long pants when outdoors to prevent mosquito bites (see <http://www.cdc.gov/ncidod/dvbid/westnile/mosquitorepellent.htm>).

## Risks from Snake Bites

Displaced reptiles, such as snakes, are likely to be found after flooding and other natural disasters. The venom of a small or immature snake can be even more concentrated than that of larger ones; therefore, all snakes should be left alone. Fewer than half of all snakebite wounds actually contain venom; however, seek medical attention immediately any time a bite breaks the skin.

If immediate medical care is available, the affected limb should be immobilized and physical activity should be limited as much as possible. If care is delayed, a loose-fitting pressure bandage that does not restrict arterial and venous flow (but does limit lymphatic flow) is recommended while the victim is moved as quickly as possible to a medical facility. Tourniquets that impair blood flow to the affected limb are generally contraindicated.

Specific therapy for snakebites is controversial and should be left to the judgment of local emergency medical personnel. Snakes tend to be active at night and in warm weather. As a precaution, boots and long pants should be worn when walking outdoors at night in areas possibly inhabited by venomous snakes. Proper protection (protective clothing, attention to surroundings, and lack of contact) are the best measures to avoid injury.

## Other Health Risks

[Leptospirosis](#) may occur in individuals who wade, swim, or bathe in waters contaminated by animal urine. In addition, exposure to animal bites, most notably bats or skunks in the south-central U.S., pose a potential risk for [rabies](#) and other infections. Persons who sustain a bite should seek immediate medical attention for appropriate management of the wound and post-exposure prophylaxis.

During natural disasters, technological malfunctions may release hazardous materials (e.g., toxic chemicals that are displaced by winds or rapidly moving water). Natural disasters may also lead to air pollution. Lung infections may occur after inhalation of sea water. Disasters resulting in massive structural collapse can cause the release of chemical or biologic contaminants (e.g., asbestos or arthrospores, leading to fungal infections). Persons with chronic pulmonary disease may be more susceptible to adverse effects from these exposures.

Other health risks are related to extremely hot temperatures, such as found in these areas (heatstroke) and the effects of the sun on the eyes (cataracts) and skin (skin cancer, sunburn),; see <http://www.cdc.gov/chooseyourcover/SunDay-brochure.htm>. Wraparound sunglasses that provide 100 percent UV ray protection should be worn for eye protection. A broad-spectrum (protection against both UVA and UVB rays) sunscreen and lip screen with at least SPF 15 should be used. Become familiar with the signs of illness related to extreme heat and what to do; see [http://www.bt.cdc.gov/disasters/extremeheat/heat\\_guide.asp#def](http://www.bt.cdc.gov/disasters/extremeheat/heat_guide.asp#def).

## Psychological/Emotional

Because of the tremendous loss of life, serious injuries, missing and separated families, and destruction of whole areas, relief workers should recognize that the situation they encounter may be extremely stressful. Keeping an item of comfort, such as a family photo, favorite music, or religious material, nearby can often offer comfort in such situations. Checking in with family members and close friends from time to time is another means of support. For additional mental health resources, see <http://www.bt.cdc.gov/masstrauma/copingpub.asp>.

On return from an affected area, relief workers who are unwell or who have become injured should receive a medical evaluation. This should include psychological support and counseling as necessary. Returning relief workers should seek health care in the event of fever, rash, respiratory illness, or any other unusual symptoms.